

Applicant : Christopher J. Klein et al.
Appln. No. : 09/862,857
Page : 7

REMARKS

In the Office Action, the Examiner rejected claim 20 under 35 U.S.C. § 112, second paragraph; rejected claims 1 and 2 under 35 U.S.C. § 102(e) as being unpatentable over U.S. Patent No. 5,936,544 issued to Gonzales et al.; rejected claims 7, 8, 11-14 and 17 under 35 U.S.C. § 102(e) as being unpatentable over U.S. Patent No. 6,154,544 issued to Farris et al.; rejected claims 3-5 under 35 U.S.C. § 103(a) as being unpatentable over Gonzales et al. in view of U.S. Patent No. 5,898,397 issued to Murray; rejected claim 6 under 35 U.S.C. § 103(a) as being unpatentable over Gonzales et al. in view of Murray and Farris et al.; rejected claims 9, 10, 15, 16 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Farris et al. in view of Murray; rejected claims 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Farris et al. in view of U.S. Patent No. 6,707,377 issued to Piper et al.; and rejected claims 21 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Gonzales et al. in view of U.S. Patent No. 6,166,650 issued to Bruwer. Applicants respectfully traverse these rejections for the reasons stated below.

By this Amendment, Applicants have cancelled claims 13-20 without prejudice, amended claims 7-11 to more clearly define the present invention, and have added new claims 23-27 to claim additional features of the present invention. Applicants submit that no new matter has been added by this Amendment. Accordingly, claims 1-12 and 21-27 are now pending.

Applicants respectfully traverse the rejection of claim 20 under 35 U.S.C. § 112, second paragraph. Nevertheless, to expedite the prosecution of this application, Applicants have cancelled claim 20 without prejudice thereby rendering this rejection moot.

Applicants respectfully traverse the rejection of claims 1 and 2 under 35 U.S.C. § 102(e) as being unpatentable over Gonzales et al. Independent claim 1 defines a control system for remotely activating an automatically opening door comprising "a plurality of transmitters held by different people, each transmitter transmits control signals; a plurality of doors at least some of which being mounted in different buildings, each of said doors including an actuator for automatically opening and closing said door and a receiver electrically coupled

Applicant : Christopher J. Klein et al.
Appln. No. : 09/862,857
Page : 8

to said actuator for receiving control signals from said transmitters and activating said actuator to open said door in response to the receipt of said control signals, wherein any one of said transmitters may be used to open any of said doors." For the reasons stated below, Applicants submit that Gonzales et al. fails to teach or suggest each and every feature of the above-quoted independent claim 1.

Gonzales et al. discloses a wireless access system that is much different from the present invention. Specifically, Gonzales et al. relates to a system providing automatic access/locking of doors whereby one must identify his or her self to the system for the door to unlock. The system, however, does not automatically open the doors, nor is the system configured to be responsive to transmitters that are carried by the person seeking to open the doors.

In the Office Action, the Examiner refers to transmitters 32 in Gonzales et al. as corresponding to the claimed transmitters. However, transmitters 32 are permanently installed interfaces between the access control unit and the door module and are not intended to be carried by people. Instead, the people who need to access and unlock the doors carry a card or use a keypad mounted to the wall by the door. To the extent the Examiner considers transmitters 32 in Gonzales et al. as corresponding to the claimed transmitters, Applicants note that such transmitters are not "held by different people." Nor, for that matter, does the plurality of doors disclosed in the system of Gonzales et al. each include a receiver for receiving control signals from such transmitters. Instead, it is the central access control unit that includes the receivers for receiving the signal from transmitters 32.

For the reasons stated above, Applicants respectfully submit that independent claim 1, as well as claim 2 which depends therefrom, are not anticipated by Gonzales et al.

Applicants respectfully traverse the rejection of claims 3-5 under 35 U.S.C. §103(a) as being unpatentable over Gonzales et al. and Murray. Murray does not teach or suggest the above-noted features of claim 1 that are missing from Gonzales et al. Thus, the combination of Gonzales et al. and Murray fails to teach or suggest each and every feature of independent claim 1, nor do they disclose each and every feature of claims 3-5 which depend from

Applicant : Christopher J. Klein et al.
Appln. No. : 09/862,857
Page : 9

independent claim 1. Accordingly, claims 3-5 are allowable over the teachings of Gonzales et al. and Murray whether considered separately or in combination.

Applicants respectfully traverse the rejection of claim 6 under 35 U.S.C. §103(a) as being obvious over Gonzales et al., Murray and Farris et al. Neither Murray nor Farris et al. teaches or suggests the above-noted features of claim 1 that are missing from Gonzales et al. Thus, the combination of Gonzales et al, Murray and Farris et al. fails to teach or suggest each and every feature of independent claim 1, nor does it disclose each and every feature of claim 6 which depends from independent claim 1. Accordingly, claim 6 is allowable over the teachings of Gonzales et al., Murray and Farris et al. whether considered separately or in combination.

Applicants respectfully traverse the rejection of claims 7, 8, 11-14 and 17 under 35 U.S.C. §102(e) as being anticipated by Farris et al.

As discussed below, Farris et al. pertains to a rolling code security system particularly useful for actuating a garage door opener. In the Farris et al. system, the receiver, which is associated with the garage door opening mechanism, must be manually trained to learn the serial number of each transmitter to which the receiver will respond by opening or closing the garage door. Such training is typically carried out by the user depressing a button located on the receiver while simultaneously causing the transmitter to transmit to the receiver. In this manner, any transmitters that are not trained and transmit a signal to the receiver will not be acknowledged and the door will not open or close. In addition, by causing the transmitter to transmit at the time the receiver learns the transmitter's serial number, the receiver learns the particular sequence of the rolling code transmitted by the transmitter so as to define a window of permitted subsequent rolling code values to which the receiver will respond by opening or closing the garage door. The system is thus what we would consider to be a "closed" system in that the serial number of each transmitter must be specifically paired and stored within the receiver.

The present invention, on the other hand, is what would be considered as an "open" system, such that transmitters that have not been previously registered or trained within the system may cause the receiver to open or close the associated door. The system of the present

Applicant : Christopher J. Klein et al.
Appln. No. : 09/862,857
Page : 10

invention does provide some protection against intruders. With systems such as that disclosed in Farris et al. and systems such as that of the present invention, the potential intruder may utilize a "code grabber." To use such a "code grabber" device, the intruder would lurk near a door to be accessed and wait until an individual seeking to enter the access door activates a transmitter to open the door. At that time, the "code grabber" of the potential intruder would also receive the transmitted code and would store it in memory to attempt to gain access to the building through that door by retransmitting the same signal at a later time.

To minimize the potential for unlawful entry by an intruder, the system of the present invention includes a receiver that has memory for storing a table in which pairs of serial numbers and hopping codes included in each transmission from legitimate transmitters are stored in a first-in/first-out basis. Thus, when a signal is received from a transmitter, the receiver may determine whether a signal having the same serial number and hopping code had previously been stored in the table. If so, the receiver will not open the door. Thus, if a potential intruder utilizing a code grabber attempts to retransmit the code that has been grabbed, the receiver at that particular door will not open the door and permit entry. Unlike the system in Farris et al., however, a legitimate transmitter does not first have to be trained or associated with any particular receiver before it may be used to open a door. Further, because a legitimate transceiver will change the hopping code portion of its transmitted signal with each activation, a receiver will not have previously received a signal including the unique serial number for that transmitter with the hopping code that is being transmitted at a particular time, and will thus open/close the door in response to such a signal.

More specifically, the present invention includes a receiver that will receive a signal transmitted from a remote transmitter. The signal would include the unique serial number of the transmitter and an encrypted portion. The encrypted portion includes a hopping code, such as a synchronization counter that changes with each transmission from a legitimate transmitter, and some discrimination bits which correspond to a portion of the serial number. When the receiver receives such a signal, it decrypts the encrypted portion and determines whether the signal is a valid signal by comparing the discrimination bits to the corresponding bits of the serial number. If the signal is a valid signal, the receiver will then determine whether there are

Applicant : Christopher J. Klein et al.
Appln. No. : 09/862,857
Page : 11

any serial numbers stored in the table that correspond to the serial number transmitted in the received signal. If the serial number is not stored in the table, the receiver may open or close the door without evaluating the synchronization counter. The receiver would then store the serial number and synchronization counter in the table for subsequent use so as to not respond to the identical signal at a later time. If the receiver determines that the serial number has been previously stored in the table, however, the receiver then checks whether the synchronization counter and the serial number have previously been stored as a pair in the table, thus indicating that the same signal had been previously received. If so, the receiver will not open or close the door. If, however, the synchronization counter and serial number pair were not previously stored in the table, the receiver will open or close the door.

With respect to independent claim 7, Farris et al. fails to teach or suggest a receiver comprising at least a memory in which a table is stored that includes pairs of serial numbers and hopping codes of hopping code control signals as received from a plurality of remote transmitters, and a control circuit that supplies an activation signal to the actuator of a door when any received hopping code control signal has a serial number and hopping code pair that does not correspond to a serial number and hopping code pair previously stored in the table. Moreover, it would not have been obvious to modify Farris et al. to include such a feature since it would render the Farris et al. system less secure. Moreover, Farris et al. teaches away from such a modification since the objective in Farris et al. is to provide a system that is as secure as possible. Accordingly, Applicants respectfully submit that independent claim 7, as well as claims 8, 11, and 12, which depend therefrom, are allowable over Farris et al. It should be noted that claims 13, 14, and 17, which were rejected over Farris et al., have been canceled without prejudice.

Applicants respectfully traverse the rejection of claims 9, 10, 15, 16, and 18 under 35 U.S.C. §103(a) as being unpatentable over Farris et al. in view of Murray. Of these claims, claims 15, 16, and 18 have been canceled without prejudice while claims 9 and 10 depend from independent claim 7. Murray fails to teach or suggest the deficiencies noted above with respect to Farris et al. as applied to independent claim 7. Thus, the combination of Farris et al. and Murray fails to teach or suggest each and every feature of independent claim 7 and thus

Applicant : Christopher J. Klein et al.
Appln. No. : 09/862,857
Page : 12

of claims 9 and 10, which depend from claim 7. Applicants therefore submit that claims 9 and 10 are allowable over the combination of Farris et al. and Murray whether considered separately or in combination.

Applicants respectfully traverse the rejection of claims 19 and 20 under 35 U.S.C. §103(a) as being unpatentable over Farris et al. in view of Piper. Nevertheless, to expedite the prosecution of this application, Applicants have canceled claims 19 and 20 thereby rendering this rejection moot.

Applicants respectfully traverse the rejection of claims 21 and 22 under 35 U.S.C. §103(a) as being unpatentable over Gonzales et al. in view of Bruwer. In the Office Action, the Examiner correctly admits that Gonzales et al. fails to teach or suggest various claimed components including an encoder microchip comprising a circuit in which an identification value is stored, a circuit in which a counter value is stored, a logic circuit that changes the value of the counter value each time the transmitter is operated, and a non-linear encoding circuit to encode the counter value to generate a transmission value. The Examiner further correctly admits that Gonzales et al. fails to disclose a circuit in which the transmission value from an encoder microchip of a transmitter is received, a circuit in which the transmission value is decoded to generate a decoded counter value, and a circuit in which the second decoded counter value obtained from the previous transmission is stored.

The Examiner, however, contends that Bruwer discloses the above-noted components that are missing from Gonzales et al. The Examiner contends that it would have been obvious to include these components in the Gonzales et al. system “with the motivation for doing so would allow a transmitter with the valid id is used to operate an access door system.”

As noted above, however, the Gonzales et al. system only utilizes transmitters and receivers to transmit signals from the door modules to receivers hardwired to the access control unit so as to eliminate the need to run hard wires between the door modules and the access control unit. Because the transmission of wireless signals within the Gonzales et al. system are is between transmitters and receivers that are permanently and fixedly installed in the building, there would be no need for the security added by the components of Bruwer. Adding such security would not otherwise prevent an unauthorized person from entering the

Applicant : Christopher J. Klein et al.
Appln. No. : 09/862,857
Page : 13

access door if they had somehow obtained a legitimate person's card or keypad input number. Accordingly, Applicants respectfully submit that one skilled in the art would not have considered modifying the Gonzales et al. system as contemplated by the Examiner and thus the invention as defined in independent claim 21, as well as claim 22, which depends therefrom, are allowable over the teachings of Gonzales et al. and Bruwer whether considered separately or in combination.

New independent claim 23 is directed to a system comprising a plurality of transmitters and a plurality of receivers where the receivers each include a control circuit that is configured to supply an activation signal to open/close a door when any received open/closed door signal has a serial number and hopping code pair that does not correspond to a serial number and hopping code pair previously stored in a table of the receiver. For the reasons stated above with respect to independent claim 7, Applicants respectfully submit that none of the cited references teaches or suggests the features of independent claim 23. New claims 24-27 depend from new claim independent 23 and are believed to be allowable based upon their dependence on claim 23.

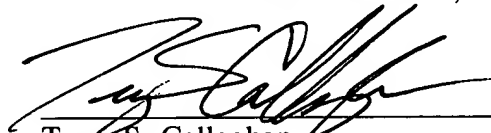
In view of the foregoing amendments and remarks, Applicants respectfully submit that the present invention as defined by the pending claims is allowable over the prior art of record. The Examiner's reconsideration and timely allowance of the claims is requested. A Notice of Allowance is therefore respectfully solicited.

Respectfully submitted,

CHRISTOPHER J. KLEIN ET AL.

By: Price, Heneveld, Cooper,
DeWitt & Litton, LLP

8-30-2004
Date


Terry S. Callaghan
Registration No. 34 559
695 Kenmoor, S.E.
Post Office Box 2567
Grand Rapids, Michigan 49501
(616) 949-9610

TSC/amm/rsu